

3240. A process according to claim 18, wherein the complexing agent of the aqueous composition is present in an amount from 0.1 g/l to 250 g/l.

3341. A process according to claim 18, wherein the complexing agent of the aqueous composition is selected from the group consisting of ethylenediamine tetra-acetic acid, diethylenetriamine penta-acetic acid, N,N,N',N'-tetrakis (2-hydroxy propyl) ethylene diamine and mixtures thereof.

3442. A process according to claim 18, wherein the aqueous composition further includes a compound selected from the group consisting of a surfactant, a wetting agent, a stabilizer, a grain refiner, a tarnish inhibitor and mixtures thereof.

3543. A process according to claim 3442, wherein the complexing agent is a surfactant that has a concentration of from 1 g/l to 15 g/l in the aqueous solution.

3644. A process, comprising the steps of:
applying a mask to cover a metal surface of a substrate, the metal surface having an electropositivity less than an electropositivity of silver, the mask being an insulator; and
contacting the metal surface with an aqueous composition comprising silver ions and a complexing agent that is a multidentate ligand, the aqueous composition having a pH of from 2 to 12, to form a coating of silver on the metal surface, wherein the aqueous composition is free of ingredients selected from the group consisting of ammonium ions, thiosulfate ions and combinations thereof.